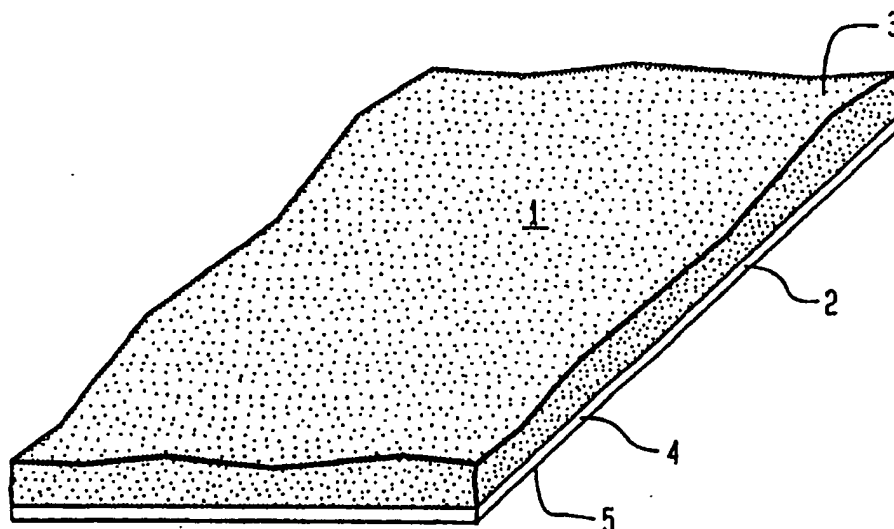




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : A61F 13/00	A1	(11) International Publication Number: WO 94/16655 (43) International Publication Date: 4 August 1994 (04.08.94)
(21) International Application Number: PCT/US93/02067 (22) International Filing Date: 23 February 1993 (23.02.93) (30) Priority Data: 08/011,741 29 January 1993 (29.01.93) US (71)(72) Applicant and Inventor: MRAZ, James, A., Sr. [US/US]; 5404 Los Serranos Circle, Las Vegas, NV 89130 (US). (74) Agent: CHAMPAGNE, Thomas, M.; Arter & Hadden, 1801 K Street, N.W., Suite 400K, Washington, DC 20006 (US).	(81) Designated States: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KP, KR, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG). Published <i>With international search report.</i>	

(54) Title: **NON-IRRITATING CLOTHING LINER FOR PERSONS WITH TOUCH SENSITIVE WOUNDS**

(57) Abstract

A liner (1) that attaches to an afflicted person's clothing, protecting the person's wound(s) from the irritating rubbing of clothing. The liner (1) has an adhesive backing (2), which is used to attach the liner to the wearer's clothing. The adhesive backing (2) is attached to a soft material (3) that will contact the wearer's skin when worn. The liners (1) may be made available in groups of a uniform size, or may be formed in assortment of sizes and shapes, to suit the wearer's needs. The liner (1) may be constructed in a large sheet that may be cut to form liners of different sizes and shapes as the wearer sees fit. In an alternative embodiment, medication may be applied to the liner (1) in order to aid the healing process of the wearer's wounds.

BEST AVAILABLE COPY

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GB	United Kingdom	MR	Mauritania
AU	Australia	GE	Georgia	MW	Malawi
BB	Barbados	GN	Guinea	NE	Niger
BE	Belgium	GR	Greece	NL	Netherlands
BF	Burkina Faso	HU	Hungary	NO	Norway
BG	Bulgaria	IE	Ireland	NZ	New Zealand
BJ	Benin	IT	Italy	PL	Poland
BR	Brazil	JP	Japan	PT	Portugal
BY	Belarus	KE	Kenya	RO	Romania
CA	Canada	KG	Kyrgyzstan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	TJ	Tajikistan
DE	Germany	MD	Republic of Moldova	TT	Trinidad and Tobago
DK	Denmark	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	US	United States of America
FI	Finland	MN	Mongolia	UZ	Uzbekistan
FR	France			VN	Viet Nam
GA	Gabon				

NON-IRRITATING CLOTHING LINER
FOR PERSONS WITH TOUCH SENSITIVE WOUNDS

5

Background of the Invention

I. Field of the Invention

The present invention relates generally to a clothing
10 liner or bandage to be used by persons having a wound or
scar tissue that is sensitive to the touch. In particular,
the invention relates to a clothing liner that adheres to
the wearer's clothing, while the side of the liner facing
the wearer's skin is made of a soft material that will not
15 irritate the wearer's wound or scar tissue.

II. Background and Description of the Related Art

People who have undergone major surgery of various
types are frequently left with scars, sometimes covering a
significant area of the body, after the healing process has
20 taken place. Frequently these scars are very sensitive to
the touch and the normal rubbing of clothing on the scars
irritates the scar tissue and causes extreme discomfort for
the person. These people must wear clothing in order to
lead an ordinary life, but for some of them, the discomfort
25 of wearing clothing in the area of the scar tissue is
almost unbearable.

In other cases, post surgery patients must return to
a normal life soon after undergoing surgery, before their
wounds have completely healed. For these people, the
30 rubbing of clothing on the wound is not only irritating, it
can also slow the healing process by aggravating the wound.
This problem is particularly acute for burn victims, whose

damaged skin may cover extensive areas of their bodies and whose wounds may take much longer to heal than other types of wounds. For many burn victims, the afflicted area may remain sensitive long after the wound has healed, and
5 permanent sensitivity of burn damaged skin is not uncommon.

Bandages are available for persons with wounds that are sensitive to the touch. For example, U.S. Patent No. 3,698,395 to Hasson discloses a surgical closure which can act as an operative drape or as a post-operative skin
10 dressing. The dressing acts as a protection for the wearer's wound, but must be attached to the wearer's skin. U.S. Patent No. 4,742,826 to McLorg discloses a similar strip suture and dressing, as do U.S. Patent No. 4,825,866 to Pierce, U.S. Patent No. 4,780,168 to Beisang et al., and
15 U.S. Patent No. 3,528,426 to Vukojevic.

A problem common to all the above dressings is that they must be attached directly to the wearer's skin. This causes additional discomfort and even pain to the wearer when the dressing must be changed, which involves
20 disengaging the dressing from the wearer's skin and reapplying a fresh dressing. Also, the design is not practical in cases where the sensitive skin area of the wearer is extensive, such as when the wearer is a burn victim suffering from burns covering a substantial part of
25 his body. Also, the dressing would not be practical for persons who no longer have an open wound, but who have scar tissue that is sensitive to the rubbing of clothing fabric. The dressing would have to be changed at least once a day

and then thrown away. Over a period of time, the cost incurred by the wearer could be substantial.

U.S. Patent No. 3,667,462 to Moon discloses surgical bandaging made of a stretchable yarn fabric which can be applied to a wearer using a hook and loop fabric fastener. While this bandage is not attached directly to the wearer's skin, it is impractical for use anywhere but on an extremity of the wearer's body, such as an arm or ankle. If the wound or scar is located on an inconvenient part of the person's body (e.g. shoulder), the bandage would be unusable to guard the wound area from rubbing by the wearer's clothing. If the wound is located on an area such as the person's back, the bandage would be usable, but impracticable. A bandage large enough to be used in such a case, encircling the wearer's torso, would soon become quite cumbersome and unbearable.

U.S. Patent No. 4,605,404 to Sneider discloses a disposable pad for pantyhose. The pad is secured by a self-stick adhesive to the inner surface of the crotch of a pair of pantyhose. This pad is specially shaped to fit the contours of the hose. The pad itself is constructed of a water impervious backing sheet and a fill material that is chosen for its absorbency and not necessarily for its comfort when in contact with a skin area such as a burn wound or scar tissue. U.S. Patent No. 4,609,373 to Johnson and U.S. Patent No. 4,959,265 to Wood et al. disclose similar pads, also neglecting to address the needs of persons who need relief from the irritating contact of

ordinary clothing with sensitive epidermal tissue.

Hermitage Hospital Products markets a gauze burn jacket and a gauze burn butt pad, both designed to cover large areas of a burn victim's body. These garments are well suited for use by a person with wounds that are still healing, but are too bulky and prohibitively expensive for daily use by someone with permanently irritating wounds.

It is therefore an object of the present invention to provide a clothing liner that is constructed of a material that is nonirritating when in rubbing contact with skin that is sensitive due to recent injury or surgery.

It is an additional object of the present invention to provide such a clothing liner that cushions the wound site, protecting the wound from pressure and shock.

It is a further object of the present invention to provide such a clothing liner that may be applied to the person's clothing rather than to the person's skin, thereby avoiding the additional irritation that a skin bandage can cause.

It is another object of the present invention to provide such a clothing liner that is reusable and can be transferred among different articles of clothing, lessening the expense for the wearer of using the pad and reducing waste generated by the wearer.

It is yet a further object of the present invention to provide such a clothing liner that is available in a number of precut sizes, the proper size to be chosen by the wearer to suit his particular needs.

It is still another object of the present invention to provide such a clothing liner that can be formed in a very large size, or in a roll, so that the wearer can cut a portion of the pad that is the perfect size to suit his particular needs.

It is an additional object of the present invention to provide such a clothing liner that is sterile in order to prevent infection of any open wound or raw epidermal layers in contact with the pad.

10 It is a further object of the present invention to provide such a clothing liner which is medicated, to provide transfer of the medication applied to the pad to skin areas in need of treatment by such medication.

These and other objects and advantages of the present invention will be apparent to those skilled in the art upon examination of the written description, drawings, and appended claims.

Summary of the Invention

The non-irritating, sterile clothing liner is a pad that attaches to the afflicted person's clothing, protecting the person's wound(s) from the irritating rubbing of clothing and cushioning the wound site from unexpected shock or pressure. Unless otherwise noted, "wound" shall denote a wound that has not fully healed; skin that has been burned, whether healed or not; and fully healed wounds that have left scar tissue.

The liner has an adhesive backing, which is used to attach the liner to the wearer's clothing. The adhesive

backing is attached to a soft, sterile material that will contact the wearer's skin when worn. The adhesive on the backing is of a gummy type that will stick securely to the wearer's clothing, but will disengage from the wearer's clothing easily, enabling the liner to be used a number of times.

The liner may be formed in a number of different configurations. The liners may be made available in groups of a uniform size, or may be formed in an assortment of sizes and shapes, to suit the wearer's needs. The liner may be constructed in a large sheet that may be cut to form liners of different sizes and shapes as the wearer sees fit. The liner may also come in a large roll, for convenience. The roll may be perforated to make it easy for the wearer to tear off an appropriately sized piece.

The material from which the liner is made is preferably sterile, in order to insure that any wound in contact with the liner will not become infected due to such contact. In an alternative embodiment, medication may be applied to the liner, in order to aid the healing process of the wearer's wounds.

The preferred and alternate embodiments of the invention are set forth in more detail in the sections to follow.

25 Brief Description of the Drawings

FIG. 1 shows the liner of the present invention.

FIG. 2 shows a perforated embodiment of the present invention.

Detailed Description of the Invention

As shown in FIG. 1, the liner 1 is constructed of two layers, an adhesive backing layer 2 and a contact layer 3. The backing layer 2 may be formed by coating a sheet of
5 backing material 4 with an adhesive substance 5. The backing material 4 can be made from any material that is flexible and not susceptible to tearing. For example, the backing material can be a knitted fabric, a natural or synthetic cloth fabric, or an elasticized fabric. The
10 backing material 4 may also be a plastic sheet or may be made from treated paper.

The adhesive substance 5 should be a pressure-sensitive adhesive chosen such that the liner 1 will adhere firmly to the wearer's clothing, yet will be easily
15 removed. The adhesive substance 5 should also remain sticky after removal, so that the liner 1 may be reapplied to other clothing a number of times. Such adhesive means are well known in the art, and a few have been described previously in the section describing related background
20 art. For example, U.S. Patent No. 4,605,404 to Sneider and U.S. Patent No. 4,959,265 to Wood et al. describe such adhesive means that may be employed by the clothing liner of the present invention. Alternate attachment means may be used. For example, hook and loop fasteners or the
25 attachment means disclosed in U.S. Patent No. 4,609,373 to Johnson may be used, but these are not preferred because they require modification of the wearer's clothing.

The contact layer 3 is the material that will come

into contact with the wearer's wounds, and so must be made from a material that is soft, sterile and will not irritate the wound area. An example of such a material is NU-GEL™ wound dressing material manufactured by Johnson & Johnson Medical Inc. Other dressing materials suitable for use with the present invention include NU-DERM™ foam dressing material, SURGIPAD™ dressing material, and STERI-PAD™ sterile pad material, all manufactured by Johnson & Johnson Medical Inc., as well as LYOf foam® foam dressing material manufactured by Acme United Corporation. All of the above materials are readily available in the marketplace and their sterile quality and physical characteristics are incorporated herein by reference. Surgical gauze packing and laparotomy sponge material may also be used. All the above-named materials are soft enough be used in rubbing contact with sensitive wounds and can be successfully used as a contact layer 3. All these materials cause a minimum of irritation for the wearer's wounds, yet provide a good cushion for the wound, in order to absorb unexpected shock.

20 The contact layer 3 is fixed to the backing layer 2 in such a way that the contact layer 3 is secure, yet is allowed some motion with respect to the backing layer 2 so as to provide a cushioning effect.

It is contemplated that the liner 1 may be formed in one shape and size that will suit most purposes. For example, a 3" by 5" rectangular liner would be adequate for many wounds, and could be used in multiples to cover the clothing in contact with larger wounds. Alternatively, the

liner 1 may be made available in many different shapes and sizes so that the particular liner suiting the wearer's needs may be chosen. The liner 1 may also be formed into large sized sheets. For example, the liner 1 may be formed
5 in sheets that are five feet square. The person using the liner may then cut clothing liners of the exact size and shape desired from the large sheet, enabling the use of custom liners in hard to fit or strangely shaped areas of clothing. The large sheet may be available on a roll, for
10 convenience, and may also be perforated, to enable the easy tearing off of an individual liner. As shown in FIG. 2, these perforations 6 may be closely spaced and run in both horizontal 7 and vertical 8 directions on the sheet, allowing for greater flexibility in the size and shape of
15 the individual liners torn from the sheet.

Because the liner 1 will be in contact with the wearer's wound(s), the liner 1 is preferably sterile, so that rubbing contact of the liner 1 with the wound does not introduce a risk of infection to the wearer. An embodiment
20 of the liner 1 may also be medicated. An over the counter medication may be applied to the contact layer 3, the backing layer 2, or both, in order to aid the healing process when the liner 1 is being worn by someone having a wound that has not yet healed. For example, the
25 aforementioned LYOf foam® material has applied to it a serous exudate which bathes exposed nerve endings, reducing pain. It is possible to have the liner 1 treated with medication that has been prescribed by the wearer's doctor, the liner

1 to then be dispensed by a pharmacist in the same manner
as a prescription drug.

A preferred and alternate embodiments of the invention
have now been described in detail. It is to be noted,
5 however, that this description of these particular
embodiments is merely illustrative of the principles
underlying the inventive concept. It is therefore
contemplated that various modifications of the disclosed
embodiments will, without departing from the spirit and
10 scope of the invention, be apparent to persons skilled in
the art.

What is claimed is:

1. A clothing liner for persons with touch sensitive wounds, comprising:
 - 5 a) a backing layer, for applying the clothing liner to the person's clothing; and
 - b) a contact layer, fixed to the backing layer;
 - c) the contact layer comprising a material that is not irritating to the person's wounds when in
10 rubbing contact with the wounds.
2. The clothing liner of claim 1 wherein the clothing liner is sterile.
3. The clothing liner of claim 2 wherein the backing layer comprises a backing material fixed to an attachment
15 means.
4. The clothing liner of claim 3 wherein the attachment means is an adhesive substance.
5. The clothing liner of claim 1 wherein the contact layer is constructed from a material selected from the
20 group consisting of NU-GEL™ wound dressing material, NU-
DERM™ foam dressing material, SURGIPAD™ dressing material, STERI-PAD™ sterile pad material, and LYOf foam® foam dressing material.
6. The clothing liner of claim 3 wherein the
25 attachment means may be removed from the person's clothing and reapplied to other clothing at least once.
7. The clothing liner of claim 2 wherein the clothing liner may be cut to form a plurality of smaller

liners of any size and shape.

8. The clothing liner of claim 2 wherein the clothing liner is perforated, enabling a plurality of smaller liners of many shapes and sizes to be torn from the
5 liner.

9. The clothing liner of claim 2 wherein the contact layer is medicated.

10. A clothing liner for persons with touch sensitive wounds, comprising:

- 10 a) a backing layer, for applying the clothing liner to the person's clothing; and
- b) a contact layer, fixed to the backing layer;
- c) the contact layer comprising a material that is not irritating to the person's wounds when in
15 rubbing contact with the wounds;
- d) the backing layer comprising a backing material fixed to an attachment means;
- e) the backing layer being removable from the person's clothing for reapplication to other
20 clothing more than once; and
- f) the liner being sterile.

11. The clothing liner of claim 10 wherein the attachment means is an adhesive substance.

12. The clothing liner of claim 10 wherein the
25 contact layer is constructed from a material selected from the group consisting of NU-GEL™ wound dressing material, NU-DERM™ foam dressing material, SURGIPAD™ dressing material, STERI-PAD™ sterile pad material, and LYOf foam®

foam dressing material.

13. The clothing liner of claim 10 wherein the liner may be cut to form a plurality of smaller liners of any size and shape.

5 14. The clothing liner of claim 10 wherein the liner is perforated, enabling a plurality of smaller liners of any shape and size to be torn from the liner.

15. The clothing liner of claim 10 wherein the contact layer is medicated.

10 16. A clothing liner for persons with touch sensitive wounds, comprising:

- a) a backing layer, for applying the clothing liner to the person's clothing; and
- b) a contact layer, fixed to the backing layer;
- 15 c) the contact layer comprising a material that is not irritating to the person's wounds when in rubbing contact with the wounds;
- d) the backing layer comprising a backing material fixed to an adhesive substance;
- 20 e) the liner being perforated, enabling a plurality of smaller liners of any shape and size to be torn from the liner.
- f) the backing layer being removable from the person's clothing for reapplication to other
- 25 clothing at least once; and
- g) the liner being sterile.

17. The clothing liner of claim 16 wherein the contact layer is constructed from a material selected from

the group consisting of NU-GEL™ wound dressing material, NU-DERM™ foam dressing material, SURGIPAD™ dressing material, STERI-PAD™ sterile pad material, and LYOf foam® foam dressing material.

- 5 18. The clothing liner of claim 17 wherein the contact layer is medicated.

1-2

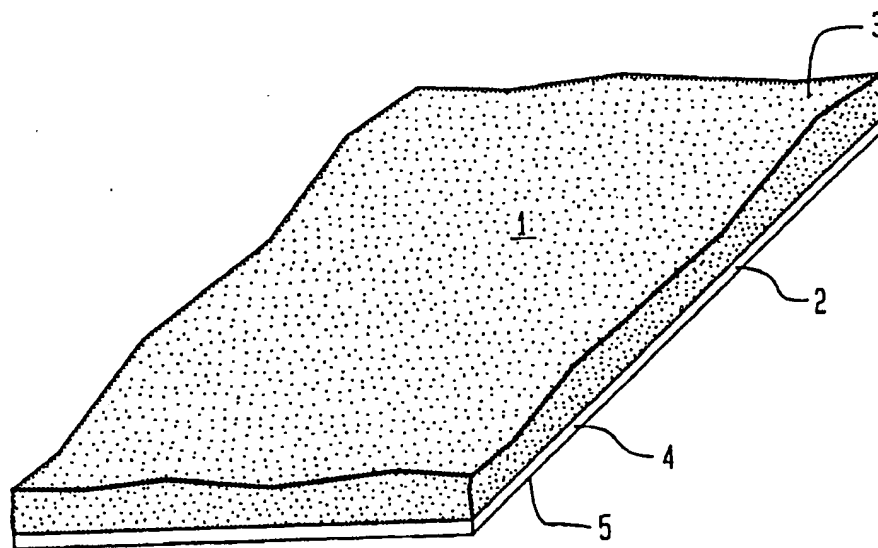


FIG. 1

SUBSTITUTE SHEET

BEST AVAILABLE COPY

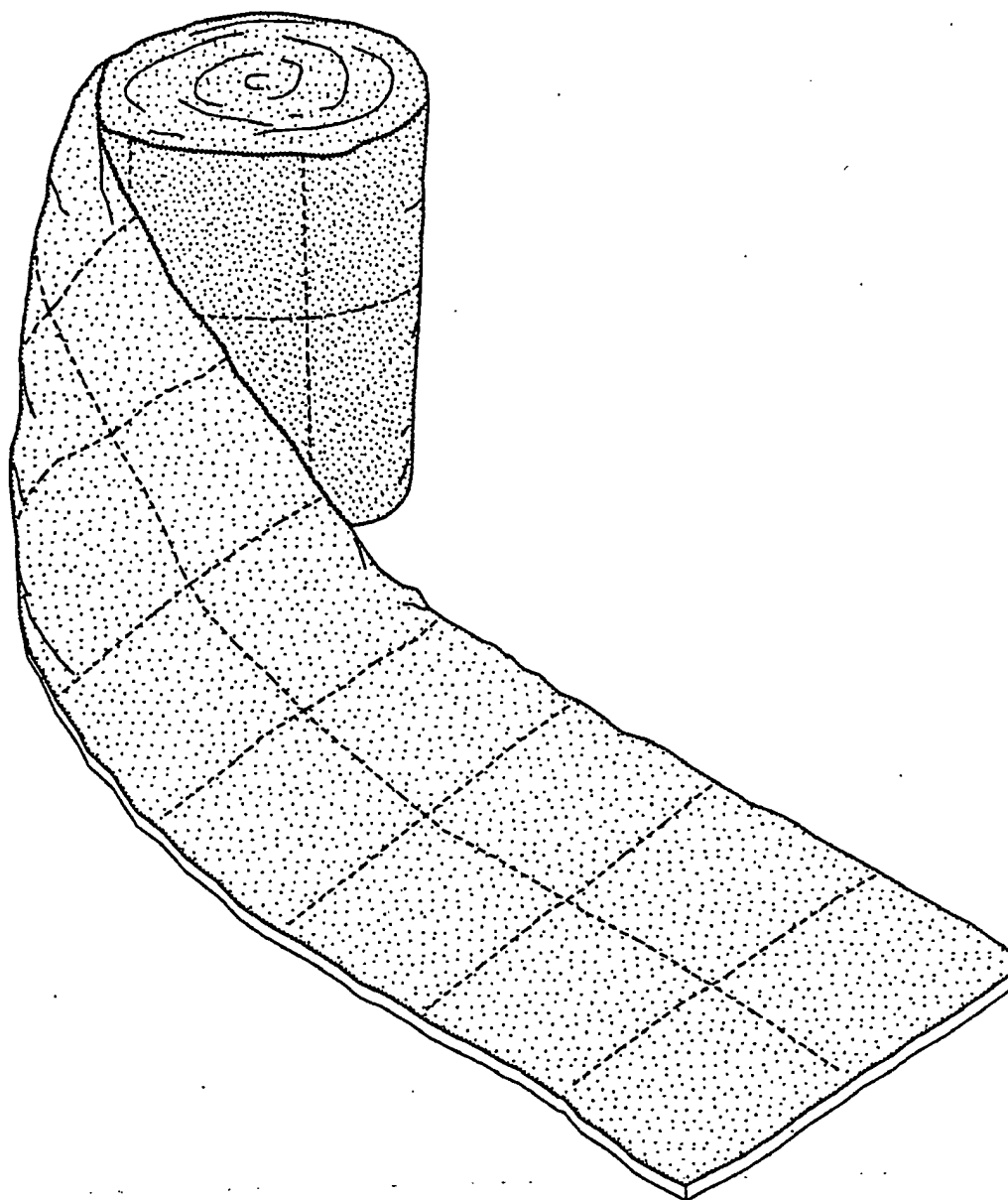


FIG. 2

SUBSTITUTE SHEET

BEST AVAILABLE COPY